This listing of claims will replace all prior versions and listings of claim in the application:

Listing of the Claims:

Claims 1-56. (cancelled)

57. (new) A broadband spectroscopic ellipsometer for evaluating a sample comprising:

means for generating a beam of polychromatic light having a range of wavelengths and a known polarization;

means for inducing a phase retardation in the beam and wherein the range of wavelengths of light and the phase retardation means are selected such that an effective phase retardation value is induced covering a range at least from 90 degrees to 180 degrees, said phase retardation means being rotatable about the propagation axis of the beam;

an analyzer positioned to interact with the light beam after the light beam interacts with the sample and the phase retardation means; and

a detector that measures the intensity of the light beam, after the interaction with the analyzer, as a function of wavelength and rotational position of the phase retardation means and with the output thereof being used to evaluate the sample.

58. (new) An ellipsometer as recited in claim 57, wherein the range of wavelengths of light and the phase retardation means are selected to induce an effective range of phase retardation values that exceeds 180 degrees.

59. (new) An ellipsometer as recited in claim 57, wherein the effective range of retardation values is centered around 180 degrees.

60. (new) An ellipsometer as recited in claim 57, wherein the range of wavelengths of light and the phase retardation means are selected such that an effective phase retardation value is induced covering from 50 to 300 degrees.

61. (new) An ellipsometer as recited in claim 57, wherein the range of wavelengths selected extends between 200 and 800nm.

62. (new) An ellipsometer as recited in claim 57, further comprising a processor that determines the polarization state of the light, after the interaction with the analyzer, from the intensities measured by the detector.

63. (new) An ellipsometer as recited in claim 62, wherein the phase retardation means is rotated at an angular frequency ω and the detector generates an output signal having a 2ω and a 4ω Fourier component and wherein the processor evaluates the sample based on the 2ω and a 4ω components of the output signal.

64. (new) An ellipsometer as recited in claim 63, wherein the processor performs a harmonic analysis on the output signal from the detector to determine normalized Fourier coefficients corresponding to the 2ω and 4ω components in the output signal.

65. (new) An ellipsometer as recited in claim 62, wherein the output signal from the detector has a DC component corresponding to the reflectance of the sample and wherein the DC component is utilized by the processor to further analyze the sample.

66. (new) An ellipsometer as recited in claim 57, wherein said beam generation means comprises a light source that generates a beam of polychromatic light and a polarizer that polarizes the light beam before the light beam interacts with the sample.

67. (new) An ellipsometer as recited in claim 66, wherein the polarizer and the analyzer are linear polarizers.

68. (new) An ellipsometer as recited in claim 57, further including a dispersive element positioned prior to the detector to angularly disperse the beam as a function of wavelength, and wherein the detector includes a plurality of detector elements positioned such that different elements measure different wavelengths simultaneously and with the output thereof being used to evaluate the sample.

69. (new) An ellipsometer as recited in claim 68, wherein said dispersive element is selected from the group consisting of a diffraction grating, prism and holographic plate.

70. (new) An ellipsometer as recited in claim 68, wherein the detector is selected from the group consisting of an optical multichannel analyzer, CCD camera and a photomultiplier.